Jeremy Shaw

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Experience

Caltrans - Engineering Intern Worked 20-40 hours per week July 2018 - Jan 2020

- Created greater internal awareness of my office's services and mission by upgrading and updating our internal website (Caltrans Onramp - Professional Development).
- Enabled greater statewide collaborative efforts to update the manual with current procedures, standards, and financial methods by modernizing an ancient, central document (Workflow Task Manual).
- Digitized in-class, professional development content and delivered it via an internal learning management system (Moodle) to Caltrans' licensed professional engineers and engineers in training.

Projects

JAWOS Time sharing OS for Intel x86 systems, developed in C and x86 assembly Fall 2019
https://github.com/jeremyshaw/JAWOS - lead a team of 3

- Developed strong problem solving skills by working with several other teams; this required continuous reevaluation of my coding practices and design decisions.
- Utilized basic Test Driven Development (TDD) techniques to rapidly iterate and test new functions.

MicroGreenHouse Web controlled & monitored greenhouse, using rPi, Python, Arduino, & C Spring 2018
https://github.com/jeremyshaw/microgreenhouse - lead a team of 4

- Learned the necessity of properly documenting my self-developed APIs and providing better code examples, as to prevent wasted work and alleviate time spent debugging the system.

EAR In-home robot for storing and retrieving items, using rPi, Python, Arduino, & C Fall 2019 - Spring 2020
https://github.com/JAJA-CSUS/EAR - cross disciplinary team

- Learned documentation is to guide, but also protect the team from feature creep while setting expectations for advisors and mentors.
- Systems Design course covering product design, market evaluation, ethics, IEEE documentation, and design for testing.

CPU 5 stage Accumulator CPU in Verilog; UVM verification & testbenching Spring 2019

- In this project, I utilized Verilog to implement a simple, reduced ISA CPU.

Fan Duct FreeCAD modeled, 3D Printed using PLA Summer 2019
https://github.com/jeremyshaw/fan-duct

- Iteratively created a fan duct for my desktop computer, preventing hot air recirculation and lowering load temperatures by ~8C for the CPU (from ~85C in Cinebench R15 to ~77C; 33C ambient)

GPU powered VM Windows Guest, Linux Host with GPU passthrough using KernelVM March 2020

- Utilized KVM & IOMMU to enable high performance GPU-accelerated applications in Win10 guest OS

Education

California State University, Sacramento GPA 3.41 January 2017 - May 2020

B.S Computer Engineering

Honors and Activities: Dean's Honor List, Tau Beta Pi, IEEE, IPC, ACM

Relevant Courses

Advanced Logic Design (Digital Logic Synthesis & RTL, using **Xilinx Vivado**)
PCB Design Fundamentals (layout to manufacturing using **Altium Designer**)
CMOS and VLSI (VLSI Design and Analog Effects, using **Cadence Virtuoso**) Intermediate Object Oriented Programming
Operating System Pragmatics (OS Architecture) Advanced Computer Organization (Computer Architecture, x86 & MIPS)
Data Structures and Algorithms Computer Networking and Internet Computer Interfacing (Embedded Microcontrollers and Devices)